

APPENDIX A

1. A method for monitoring a parameter of a tire for a vehicle having a plurality of conductive components which form an electromagnetic path with first and second ends, the method comprising the steps of:

generating a signal indicative of a parameter of the tire using a sensor disposed within the tire;

transmitting the generated signal along the electromagnetic path by introducing the generated signal to the electromagnetic path first end wherein the electromagnetic path includes a ground plane of the vehicle;

receiving a path signal at the electromagnetic path second end, the path signal being responsive to the generated signal; and

monitoring the tire parameter by monitoring the path signal.

2. The method of claim 1 wherein the step of generating a signal is performed at periodic intervals separated by an interval in which no signal is generated.

3. The method of claim 1 wherein the step of monitoring includes the step of comparing the tire parameter to a selected threshold.

4. The method of claim 1 further comprising the step of indicating status of the monitored tire pressure.

5. The method of claim 1 wherein the tire parameter is pressure within the tire.

6. The method of claim 1 wherein the tire parameter is temperature within the tire.

7. A system for monitoring a parameter of a tire for a vehicle, the system comprising:

a sensor, disposed within the tire, for generating a signal indicative of the parameter of the tire;

an electromagnetic path being formed of a plurality of conductive components of the vehicle including a ground plane of the vehicle, the electromagnetic path having first and second ends;

a transmitter, in electrical communication with the sensor and with the electromagnetic path first end, for transmitting the generated signal along the electromagnetic path;

a receiver, in electrical communication with the electromagnetic path second end, for receiving a path signal at the electromagnetic path second end, the path signal being responsive to the generating signal; and

a monitor, in electrical communication with the receiver, for monitoring the tire parameter by monitoring the path signal.

8. The system of claim 7 wherein the tire parameter is pressure within the tire.

9. The system of claim 8 wherein the sensor comprises a first conductive plate which flexes in response to tire pressure and a second conductive plate which is stationary with respect to the first conductive plate such that capacitance between the two plates is a function of tire pressure.

10. The system of claim 7 wherein the tire parameter is temperature within the tire.

11. The system of claim 7 wherein the electromagnetic path comprises:

a wheel rim for the tire;

one or more wheel bearings for rotatably supporting the wheel on a non-rotating member; and
the non-rotating member.

12. The system of claim 7 wherein the monitored tire is a tire mounted to support the vehicle.

13. The system of claim 7 wherein the monitored tire is a spare tire.

14. The system of claim 7 further comprising means for activating the sensor wherein the signal is generated only at periodic intervals separated by an interval in which no signal is generated.

15. The system of claim 7 wherein the monitor includes means for comparing the tire parameter to a selected threshold.

16. The system of claim 7 further comprising an indicator in electrical communication with the monitor for indicating status of the monitored tire parameter.

17. A system for monitoring a parameter of a tire for a vehicle, the system comprising:

a sensor, disposed within the tire, for generating a signal indicative of the pressure of the tire;

an electromagnetic path being formed of a plurality of conductive components of the vehicle ground plane including a wheel rim for the tire, one or more wheel bearings for rotatably supporting the wheel on a non-rotating member, and the non-rotating member, the electromagnetic path having first and second ends;

a transmitter, in electrical communication with the sensor and with the electromagnetic path first end, for transmitting the generated signal along the electromagnetic path;

a receiver, in electrical communication with the electromagnetic path second end, for receiving a path signal at the electromagnetic path second end, the path signal being responsive to the generating signal; and

a monitor, in electrical communication with the receiver, for monitoring the tire parameter by monitoring the path signal.

18. The system of claim 17 wherein the tire parameter is pressure within the tire.

19. The system of claim 18 wherein the sensor comprises a first conductive plate which flexes in response to tire pressure and a second conductive plate which is stationary with respect to the first conductive plate such that capacitance between the two plates is a function of the tire pressure.

20. The system of claim 17 wherein the tire parameter is temperature within the tire.

21. The system of claim 17 further comprising means for activating the sensor wherein the signal is generated only at periodic intervals separated by an interval in which no signal is generated.

22. The system of claim 17 wherein the monitor includes a comparator for comparing tire pressure to a selected threshold.

23. The system of claim 17 further comprising an indicator in electrical communication with the monitor for indicating status of the monitored tire pressure.